Complete Summary

GUIDELINE TITLE

Position statement on the use of the ankle brachial index in the evaluation of patients with peripheral vascular disease: a consensus statement developed by the Standards Division of the Society of Interventional Radiology.

BIBLIOGRAPHIC SOURCE(S)

Sacks D, Bakal CW, Beatty PT, Becker GJ, Cardella JF, Raabe RD, Wiener HM, Lewis CA. Position statement on the use of the ankle brachial index in the evaluation of patients with peripheral vascular disease. A consensus statement developed by the Standards Division of the Society of Interventional Radiology. J Vasc Interv Radiol 2003 Sep;14(9 Pt 2):S389. [3 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Peripheral vascular disease (also known as peripheral arterial disease)
- Diabetes

GUIDELINE CATEGORY

Diagnosis
Evaluation

CLINICAL SPECIALTY

Cardiology
Radiology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide a methodology for ankle-brachial index measurement

TARGET POPULATION

Patients with peripheral vascular disease

INTERVENTIONS AND PRACTICES CONSIDERED

1. Ankle-brachial index measurement
2. Toe pressure measurement in patients with diabetes and heavily calcified vessels

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Peripheral vascular disease (PVD), also known as peripheral arterial disease, affects more than 8-10 million Americans, and its incidence is growing annually. PVD is a risk marker for coronary disease, cerebrovascular disease, aneurysmal disease, diabetes, hypertension, and many other conditions. Patients with objectively documented PVD have a four- to six-fold increase in cardiovascular mortality rate over healthy age-matched individuals. Fifty percent of people with PVD are symptomatic. One of the simplest and most useful parameters to objectively assess lower extremity arterial perfusion is the ankle-brachial index (ABI). The ABI helps to define the severity of the disease and successfully screens for hemodynamically significant disease. The Society of Interventional Radiology (SIR) recommends that all patients being evaluated for peripheral vascular disease should have their ABI measured.

The following methodology is recommended:

With the patient placed in a supine position, the brachial and ankle systolic pressure measurements are obtained. The higher systolic pressure of the anterior tibial or posterior tibial measurement for each foot is divided by the highest brachial systolic pressure to obtain an ankle brachial pressure ratio. For example,

to obtain the left ABI, first measure the systolic brachial pressure in both the left and the right arm. Select the higher of these two values as the brachial artery pressure measurement. There should be a difference of less than 10 mm Hg between each brachial pressure measurement. Next, measure the left anterior tibial and posterior tibial arterial systolic pressures. Select the higher of these two values as the ankle pressure measurement. Then, divide the selected ankle pressure measurement by the previously selected brachial artery systolic pressure measurement. This will give the ABI.

ABIs as high as 1.10 are normal; abnormal values are those less than 1.0. The majority of patients with claudication have ABIs ranging from 0.3 to 0.9. Rest pain or severe occlusive disease typically occurs with an ABI lower than 0.50. Indexes lower than 0.20 are associated with ischemic or gangrenous extremities.

In patients with diabetes and heavily calcified vessels, the arteries are frequently incompressible. This results in an artifactually elevated ankle pressure, which can underestimate disease severity. In these patients, toe pressure determinations more accurately reflect perfusion.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate measurement of the ankle-brachial index (ABI)
- The ABI helps to define the severity of the disease and successfully screens for hemodynamically significant disease.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The clinical practice guidelines of the Society of Interventional Radiology (SIR) attempt to define practice principles that generally should assist in producing high quality patient care. These guidelines are voluntary and are not rules. A physician

may deviate from these guidelines, as necessitated by the individual patient and available resources. These practice guidelines should not be deemed inclusive of all proper methods of care or exclusive of other methods of care that are reasonably directed towards the same result. Other sources of information may be used in conjunction with these principles to produce a process leading to high quality medical care. The ultimate judgment regarding the conduct of any specific procedure or course of management must be made by the physician, who should consider all circumstances relevant to the individual clinical situation. Adherence to the SIR Quality Improvement Program will not assure a successful outcome in every situation. It is prudent to document the rationale for any deviation from the suggested practice guidelines in the department policies and procedure manual or in the patient's medical record.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Sacks D, Bakal CW, Beatty PT, Becker GJ, Cardella JF, Raabe RD, Wiener HM, Lewis CA. Position statement on the use of the ankle brachial index in the evaluation of patients with peripheral vascular disease. A consensus statement developed by the Standards Division of the Society of Interventional Radiology. J Vasc Interv Radiol 2003 Sep;14(9 Pt 2):S389. [3 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003 Sep

GUIDELINE DEVELOPER(S)

Society of Interventional Radiology - Medical Specialty Society

SOURCE(S) OF FUNDING

Society of Interventional Radiology

GUIDELINE COMMITTEE

Standards of Practice Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Committee Members: David Sacks, MD; Curtis W. Bakal, MD, MPH; Peter T. Beatty, MD; Gary J. Becker, MD; John F. Cardella, MD; Rodney D. Raabe, MD; Harvey M. Wiener, DO; Curtis A. Lewis, MD, MBA

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Society of Interventional Radiology Web site.

Print copies: Available from the Society of Interventional Radiology, 10201 Lee Highway, Suite 500, Fairfax, VA 22030

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on January 18, 2005. The information was verified by the guideline developer on January 21, 2005.

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